field activities, assessment instruments, slide and video tape presentations, films, games, simulations, planetarium lessons and labs, computer simulations, and descriptions of instructional strategies which will help provide principal components of an activity-oriented astronomy curriculum.

Guidelines for the submission of materials follow:

1. Materials must be easily used at other facilities without major investments and modifications.
2. Developers of materials must be willing to disseminate materials at cost.
3. Each potential submission to the network must be accompanied by the materials survey form with all items completed.
4. One complementary copy of all materials must be submitted with the survey form to establish a clearing-house for the astronomy education materials. Materials not used will be returned.

In the spring of 1981 an *Astronomy Materials Resource Guide* will be published which will provide listings describing all submitted materials and how they can be obtained. All persons submitting at least one entry will receive one copy sent free of charge. Otherwise the *Resource Guide* will be available for a projected cost of $4.

Future plans call for yearly updating and continuation of this Astronomy Resource Material Dissemination Network through an annual survey. Publication of updated Resource Guides in late spring should help educators plan for the following school year or for summer activities. For further information and submission survey forms, contact Dennis W. Sunal, Astronomy Education Materials Project, 604-M Allen Hall, Curriculum and Instruction Department, West Virginia University, Morgantown, W.V. 26506.

A SCIENCE EXPOSITION at Records Hall, Rutgers University, originally set for November 13-14, has been re-scheduled to take place Friday and Saturday, March 13-14, 1981, it has been announced by the Research and Development Council of New Jersey. The Expo is part of a planning and feasibility study for the creation of a major science/technology center in New Jersey. The study is supported by the New Jersey Science Teachers Association and the New Jersey Academy of Sciences. Inquiries should be sent to the New Jersey Science/Technology Center, Inc., 1220 Route 46, Parsippany, N.J. 07054.

Index to Volume 17 (1980)

ANATOMY: "Dissecting a White Mouse" (B. E. Kostich), Feb./Mar., p. 9.

ART, *Student:* "Illustrating Science Concepts" (Charles Piemonte), Nov./Dec., p. 7.

ASTRONOMY: "Focus on the Moon" (Deborah Byrd), Sept /Oct., p 11.

ATMOSPHERE: "Supercooling Water: A Simple Technique" (Ira W. Geer), Nov./Dec., p. 33.

BACTERIA: "Kills Germs by the Millions!" (Molly Swails), Sept./Oct., p. 3.

"Banneker, Benjamin: Astronomer and Mathematician" (Lawrence Box and Thomas E. McDuffie), Feb./Mar., p. 6.

Books Reviewed, 1979. Feb./Mar., p. 46.

BOTANY: "Getting Acquainted with the Dandelion" (Vera Knapp and Clifford Knapp), Apr./May, p. 21.

Box, Lawrence, and Thomas E. McDuffie. "Benjamin Banneker: Astronomer and Mathematician," Feb./Mar., p. 6; "Charles R. Drew (1904-50)," Sept./Oct., p. 26; "George Washington Carver," Nov./Dec., p. 13.

Brunner, Mark. "Explore, Evaluate, Experience the Environment: Elementary Activities," Nov./Dec., p. 25.

Byrd, Deborah. "Focus on the Moon," Sept./Oct., p. 11.

"Carver, George Washington" (Lawrence Box and Thomas E. McDuffie), Nov./Dec., p. 13.

"Chemistry of a Cake, or Eating Metric" (Constance Marino and Joseph S. Schmuckler), Nov./Dec., p. 30.

CHROMATOGRAPHY: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.

COMPOUNDS: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.

CURRICULUM DEVELOPMENT: "Wake up! Broaden Your Outlook!" (Annette Reis Lynch), Sept./Oct., p. 21.

DeBruin, Jerome E. "How Can I Help My Child with a Science Fair Project?" Sept./Oct., p. 16.

"Developing an Environmental Ethic: A Values Education Model" (Clifford E. Knapp), Apr./May, p. 39.

Disinger, John F. "Locating Environmental Education Materials through ERIC," Apr./May, p. 5.

"Dissecting a White Mouse" (B. E. Kostich), Feb./Mar., p. 9.

"Drew, Charles R. (1904-50)" (Lawrence Box and Thomas E. McDuffie), Sept./Oct., p. 26.

"Educational Field Trip—Or Rip-Roaring Holiday?" (Darlene E. Fisher), Nov./Dec., p. 22.

"Energy: A Crossword Puzzle" (A. Fraulo), Feb./Mar., p. 13.

ENGINEERING CONCEPTS: "Science Can Be Wheel Fun" (Michael B. Leyden), Feb./Mar., p. 24.

field activities, assessment instruments, slide and video tape presentations, films, games, simulations, planetarium lessons and labs, computer simulations, and descriptions of instructional strategies which will help provide principal components of an activity-oriented astronomy curriculum.

Guidelines for the submission of materials follow:

1. Materials must be easily used at other facilities without major investments and modifications.
2. Developers of materials must be willing to disseminate materials at cost.
3. Each potential submission to the network must be accompanied by the materials survey form with all items completed.
4. One complementary copy of all materials must be submitted with the survey form to establish a clearing-house for the astronomy education materials. Materials not used will be returned.

In the spring of 1981 an *Astronomy Materials Resource Guide* will be published which will provide listings describing all submitted materials and how they can be obtained. All persons submitting at least one entry will receive one copy sent free of charge. Otherwise the *Resource Guide* will be available for a projected cost of $4.

Future plans call for yearly updating and continuation of this Astronomy Resource Material Dissemination Network through an annual survey. Publication of updated Resource Guides in late spring should help educators plan for the following school year or for summer activities. For further information and submission survey forms, contact Dennis W. Sunal, Astronomy Education Materials Project, 604-M Allen Hall, Curriculum and Instruction Department, West Virginia University, Morgantown, W.V. 26506.

A SCIENCE EXPOSITION at Records Hall, Rutgers University, originally set for November 13-14, has been re-scheduled to take place Friday and Saturday, March 13-14, 1981, it has been announced by the Research and Development Council of New Jersey. The Expo is part of a planning and feasibility study for the creation of a major science/technology center in New Jersey. The study is supported by the New Jersey Science Teachers Association and the New Jersey Academy of Sciences. Inquiries should be sent to the New Jersey Science/Technology Center, Inc., 1220 Route 46, Parsippany, N.J. 07054.

Index to Volume 17 (1980)

ANATOMY: "Dissecting a White Mouse" (B. E. Kostich), Feb./Mar., p. 9.

ART, *Student:* "Illustrating Science Concepts" (Charles Piemonte), Nov./Dec., p. 7.

ASTRONOMY: "Focus on the Moon" (Deborah Byrd), Sept /Oct., p 11.

ATMOSPHERE: "Supercooling Water: A Simple Technique" (Ira W. Geer), Nov./Dec., p. 33.

BACTERIA: "Kills Germs by the Millions!" (Molly Swails), Sept./Oct., p. 3.

"Banneker, Benjamin: Astronomer and Mathematician" (Lawrence Box and Thomas E. McDuffie), Feb./Mar., p. 6.

Books Reviewed, 1979. Feb./Mar., p. 46.

BOTANY: "Getting Acquainted with the Dandelion" (Vera Knapp and Clifford Knapp), Apr./May, p. 21.

Box, Lawrence, and Thomas E. McDuffie. "Benjamin Banneker: Astronomer and Mathematician," Feb./Mar., p. 6; "Charles R. Drew (1904-50)," Sept./Oct., p. 26; "George Washington Carver," Nov./Dec., p. 13.

Brunner, Mark. "Explore, Evaluate, Experience the Environment: Elementary Activities," Nov./Dec., p. 25.

Byrd, Deborah. "Focus on the Moon," Sept./Oct., p. 11.

"Carver, George Washington" (Lawrence Box and Thomas E. McDuffie), Nov./Dec., p. 13.

"Chemistry of a Cake, or Eating Metric" (Constance Marino and Joseph S. Schmuckler), Nov./Dec., p. 30.

CHROMATOGRAPHY: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.

COMPOUNDS: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.

CURRICULUM DEVELOPMENT: "Wake up! Broaden Your Outlook!" (Annette Reis Lynch), Sept./Oct., p. 21.

DeBruin, Jerome E. "How Can I Help My Child with a Science Fair Project?" Sept./Oct., p. 16.

"Developing an Environmental Ethic: A Values Education Model" (Clifford E. Knapp), Apr./May, p. 39.

Disinger, John F. "Locating Environmental Education Materials through ERIC," Apr./May, p. 5.

"Dissecting a White Mouse" (B. E. Kostich), Feb./Mar., p. 9.

"Drew, Charles R. (1904-50)" (Lawrence Box and Thomas E. McDuffie), Sept./Oct., p. 26.

"Educational Field Trip—Or Rip-Roaring Holiday?" (Darlene E. Fisher), Nov./Dec., p. 22.

"Energy: A Crossword Puzzle" (A. Fraulo), Feb./Mar., p. 13.

ENGINEERING CONCEPTS: "Science Can Be Wheel Fun" (Michael B. Leyden), Feb./Mar., p. 24.

ENVIRONMENT: "Environmental Education Issue, Apr./May; "Explore, Evaluate, Experience the Environment: Elementary Activities" (Mark Brunner), Nov./Dec., p. 25; "Incident at Stoney Creek" (Clark L. Guerin), Sept./Oct., p. 7; "Simulation: For Environmental Education and Awareness, Appendix" (Stephen J. Zipko), Sept./Oct., p. 30.
"Environmental Awareness on the School Site" (Elizabeth L. Hammerman and Donald R. Hammerman), Apr./May, p. 15.
ERIC: "Locating Environmental Education Materials through ERIC" (John F. Disinger), Apr./May, p. 5.
ETHICS: "Developing an Environmental Ethic: A Values Education Model" (Clifford E. Knapp), Apr./May, p. 39.
"Explore, Evaluate, Experience the Environment: Elementary Activities" (Mark Brunner), Nov./Dec., p. 25.
"Exploring Noise: Sound Pollution (Part III)" (Thomas J. Rillo), Feb./Mar., p. 31.

FIELD TRIPS: "Educational Field Trip—Or Rip-Roaring Holiday?" (Darlene E. Fisher), Nov./Dec., p. 22.
Fisher, Darlene E. "Educational Field Trip—Or Rip-Roaring Holiday?" Nov./Dec., p. 22.
"Focus on the Moon" (Deborah Byrd), Sept./Oct., p. 11.
"Forensic Science: Hair Identification" (Elhannan L. Keller), Nov./Dec., p. 16.
Fraulo, A. "Energy: A Crossword Puzzle," Feb./Mar., p. 13.

Geer, Ira W. "Supercooling Water: A Simple Technique," Nov./Dec., p. 33.
"Getting Acquainted with the Dandelion" (Vera Knapp and Clifford Knapp), Apr./May, p. 20.
"Giant Hissing Bugs for a Lively Science Class" (Claire Stuart), Feb./Mar., p. 3.
Glueck, Richard D. "Tempest in a Teapot: A Classroom Model for Studying Tanker Spillage," Nov./Dec., p. 20.
Guerin, Clark L. "Incident at Stoney Creek," Sept./Oct., p. 7.

HAIR: "Forensic Science: Hair Identification" (Elhannan L. Keller), Nov./Dec., p. 16.
"Hamburger Mathematics" (Michael B. Leyden), Nov./Dec., p. 14.
Hammerman, Elizabeth L., and Donald R. Hammerman, "Environmental Awareness on the School Site," Apr./May, p. 15.
Hardin, Larry D. "We Wish You a Metric Christmas," Sept./Oct., p. 14.
HOMEWORK: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.
"How Can I Help My Child with a Science Fair Project?" (Jerome E. DeBruin), Sept./Oct., p. 16.
Hug, John. "Other Resources for Environmental Education," Apr./May, p. 19; "Two Hats," Apr./May, p. 24.
Hunter, C. Bruce. "Science Fiction for Science Teachers," Nov./Dec., p. 9.

Illustrating Science Concepts" (Charles Piemonte), Nov./Dec., p. 7.
"Incident at Stoney Creek" (Clark L. Guerin), Sept./Oct., p. 7.
Index to Volume 16 (1979), Feb./Mar., p. 44.
INSECTS: "Giant Hissing Bugs for a Lively Science Class" (Claire Stuart), Feb./Mar., p. 3.
INTEGRATION: "Science Happenings: Integrating Science with Other Subjects" (Alan Ward), Nov./Dec., p. 23.
"Introduction" to Environmental Education Issue (Thomas J. Rillo), Apr./May, p. 3.

"Jean Piaget and One Square Inch of Thought" (Michael B. Leyden), Sept./Oct., p. 27.

Keller, Elhannan L. "Forensic Science: Hair Identification," Nov./Dec., p. 16.
"Kills Germs by the Millions" (Molly Swails), Sept./Oct., p. 3.
Kostich, B. E. "Dissecting a White Mouse," Feb./Mar., p. 9.
Knapp, Clifford E. "Developing an Environmental Ethic: A Values Education Model," Apr./May, p. 39.
Knapp, Vera, and Clifford Knapp. "Getting Acquainted with the Dandelion," Apr./May, p. 20.

Latta, Richard. "Match the Minerals," Sept./Oct., p. 19.
Leyden, Michael B. "Hamburger Mathematics," Nov./Dec., p. 14; "Jean Piaget and One Square Inch of Thought," Sept./Oct., p. 27; "Science Can Be Wheel Fun," Feb./Mar., p. 24.
LITERATURE: "Science Fiction for Science Teachers" (C. Bruce Hunter), Nov./Dec., p. 9.
"Locating Environmental Education Materials through ERIC" (John F. Disinger), Apr./May, p. 5.
Lynch, Annette Reis. "Wake Up! Broaden Your Outlook," Sept./Oct., p. 21.

McDuffie, Thomas E., and Lawrence Box. "Benjamin Banneker: Astronomer and Mathematician," Feb./Mar., p. 6; "Charles R. Drew (1904-50)," Sept./Oct., p. 26; "George Washington Carver," Nov./Dec., p. 13. And Catherine Santopolo. "Science Activities as Homework," Feb./Mar., p. 17.
"Magic Sun" (Robert Neulieb and Marilyn Neulieb), Feb./Mar., p. 14.
"Marine Interstitial Fauna: An Ideal Intertidal Community for Field and Laboratory Study" (Donald J. Zinn), Nov./Dec., p. 3.
Marino, Constance, and Joseph S. Schmuckler. "The Chemistry of a Cake, or Eating Metric," Nov./Dec., p. 30.
"Match the Minerals" (Richard Latta), Sept./Oct., p. 19.
MATHEMATICS: "Science Can Be Wheel Fun" (Michael B. Leyden), Feb./Mar., p. 24; *Daily Use:* "Hamburger Mathematics" (Michael B. Leyden), Nov./Dec., p. 14.
MATTER, *Conservation:* "Jean Piaget and One Square Inch of Thought" (Michael B. Leyden), Sept./Oct., p. 27.
METRICS: "The Chemistry of a Cake, or Eating Metric" (Constance Marino), Nov./Dec., p. 30; "We Wish You a Metric Christmas" (Larry D. Hardin), Sept./Oct., p. 14.
MICROSCOPE: "Forensic Science: Hair Identification" (Elhannan L. Keller), Nov./Dec., p. 16.
MINERALS: "Match the Minerals" (Richard Latta), Sept./Oct., p. 19.
MOLECULAR ACTIVITY: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.

Neulieb, Robert, and Marilyn Neulieb. "The Magic Sun," Feb./Mar., p. 14.

OIL, *Cleanup:* "Tempest in a Teapot: A Classroom Model for Studying Tanker Spillage" (Richard D. Glueck), Nov./Dec., p. 20.
"Other Resources for Environmental Education" (John Hug), Apr./May, p. 19.
OUTDOOR EDUCATION: "Environmental Adventures" (Russel E. Bachert, Jr.), Apr./May, p. 8.

"Parachute Ecology" (Thomas J. Rillo), Apr./May, p. 25.
PIAGET, JEAN: "Jean Piaget and One Square Inch of Thought" (Michael B. Leyden), Sept./Oct., p. 27.

Piemonte, Charles. "Illustrating Science Concepts," Nov./Dec., p. 7.
PUZZLES: "Energy: A Crossword Puzzle" (A. Fraulo), Feb./Mar., p. 13; "Match the Minerals" (Richard Latta), Sept./Oct., p. 19.

RELATIVE POSITION: "Science Can Be Wheel Fun" (Michael B. Leyden), Feb./Mar., p. 24.
Rillo, Thomas J. "Exploring Noise: Sound Pollution (Part III)," Feb./Mar., p. 31; "Introduction" to Environmental Education Issue, Apr./May, p. 25.

Santopolo, Catherine, and Thomas E. McDuffie, Jr. "Science Activities as Homework," Feb./Mar., p. 17.
"Schmuckler, Joseph S., and Constance Marino. "The Chemistry of a Cake, or Eating Metric," Nov./Dec., p. 30.
"Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.
"Science Can Be Wheel Fun" (Michael B. Leyden), Feb./Mar., p. 24.
SCIENCE FAIRS: "How Can I Help My Child with a Science Fair Project?" (Jerome E. DeBruin), Sept./Oct., p. 16.
"Science Fiction for Science Teachers" (C. Bruce Hunter), Nov./Dec., p. 9.
"Science Happenings: Integrating Science with Other Subjects" (Alan Ward), Nov./Dec., p. 23.
SCIENTISTS, *Black:* "Benjamin Banneker, Astronomer and Mathematician" (Lawrence Box and Thomas E. McDuffie), Feb./Mar., p. 6; "Charles R. Drew (1904-50)" (Box and McDuffie), Sept./Oct., p. 26; "George Washington Carver" (Box and McDuffie), Nov./Dec., p. 13.
"Simulation: For Environmental Education and Awareness" (Stephen J. Zipko), Apr./May, p. 25; Appendix continued, Sept./Oct., p. 30.
SOLAR POTENTIAL: "The Magic Sun" (Robert Neulieb and Marilyn Neulieb), Feb./Mar., p. 15.
SOLUTIONS: "Science Activities as Homework" (Catherine Santopolo and Thomas E. McDuffie, Jr.), Feb./Mar., p. 17.
SOUND: "Exploring Noise: Sound Pollution (Part III)" (Thomas J. Rillo), Feb./Mar., p. 31.
Stuart, Claire. "Giant Hissing Bugs for a Lively Science Class," Feb./Mar., p. 3.
"Supercooling Water: A Simple Technique" (Ira W. Geer), Nov./Dec., p. 33.
Swails, Molly. "Kills Germs by the Millions," Sept./Oct., p. 3.
"Tempest in a Teapot: A Classroom Model for Studying Tanker Spillage" (Richard D. Glueck), Nov./Dec., p. 20.
"Two Hats" (John Hug), Apr./May, p. 24.

"Wake Up! Broaden Your Outlook" (Annette Reis Lynch), Sept./Oct., p. 21.
Ward, Alan. "Science Happenings: Integrating Science with Other Subjects," Nov./Dec., p. 23.
"We Wish You a Metric Christmas" (Larry D. Hardin), Sept./Oct., p. 14.

Zinn, Donald J. "The Marine Interstitial Fauna: An Ideal Intertidal Community for Field and Laboratory Study," Nov./Dec., p. 3.
Zipko, Stephen J. "Simulation: For Environmental Education and Awareness," Apr./May, p. 32; Appendix continued, Sept./Oct., p. 30.

BOOKS REVIEWED, 1980

Anderson, Donald J. *Investigating Science in the Swimming Pool and Ocean.* Feb./Mar., p. 39 (Julian R. Brandou).

Bachert, Russel E., and Emerson Snooks. *Outdoor Education Equipment.* Apr./May, p. 44 (Thomas J. Rillo).
BOOKS RECEIVED. Feb./Mar., p. 41; Sept./Oct., p. 45; Nov./Dec., p. 43.
Borgese, Elisabeth Mann, and Norton Ginsburg, eds. *Ocean Yearbook I.* Nov./Dec., p. 38 (Albert C. Jensen).
Burton, Robert. *Seals.* Nov./Dec., p. 41 (Walter L. Gojmerac).
Busch, Phyllis S. *Cactus in the Desert.* Sept./Oct., p. 43 (Emanuel D. Rudolph).

Chambers, Kenneth A. *A Country-Lover's Guide to Wildlife: Mammals, Amphibians, and Reptiles of the Northeastern United States.* Nov./Dec., p. 38 (Robert W. Boenig).

Davies, P. C. W. *Space and Time in the Modern Universe.* Nov./Dec., p. 40 (Charlie Piemonte).
Dock, George, Jr. *Audubon's Birds of America.* Sept./Oct., p. 42 (Karl L. Trever).

Freeman, W. H., and Brain Bracegirdle. *An Atlas of Embryology,* 3d ed. Feb./Mar., p. 40 (Joseph Patrick Kennedy).
Frisch, Otto R. *What Little I Remember.* Nov./Dec., p. 42 (Clarence J. Murphy).

Hammerman, Donald R., and William M. Hammerman. *Teaching in the Outdoors.* Apr./May, p. 43 (Nadine A. Nordby).
Hogg, Margaret E. *Animals in Schools: Vertebrates.* Sept./Oct., p. 42 (Carl Gans).

Kellington, S. H., and A. C. Mitchell. *An Evaluation of New Science Worksheets for Scottish Integrated Science.* Feb./Mar., p. 38 (Howard J. Stein).

Moss, Thelma. *The Body Electric.* Nov./Dec., p. 39 (George G. Mallinson).

Parker, Stephen. *Life before Birth: The Story of the First Nine Months.* Feb./Mar., p. 39 (Donald J. Nash).

Ricciuti, Edward R. *Plants in Danger.* Sept./Oct., p. 42 (Emanuel D. Rudolph).
____. *Wildlife of the Mountains* (Wildlife Habitat Series). Sept./Oct., p. 43 (Vagn Flyger).

Selsam, Millicent. *Tyrannosaurus Rex.* Feb./Mar., p. 40 (George R. Zug).
Showers, Victor. *World Facts and Figures.* Nov./Dec., p. 41 (Arthur H. Doerr).
Simon and Schuster. *Complete Guide to Freshwater and Marine Aquarium Fishes.* Sept./Oct., p. 45 (Howard W. Puffer).
Stapp, William B., and Dorothy Cox, eds. *Environmental Education Activities Manual.* Apr./May, p. 43. (Thomas J. Rillo).
Stonehouse, Bernard. *Penguins.* Nov./Dec., p. 41 (Walter L. Gojmerac).
Sullivan, Dennis. *Lots of Dots: Learning with Coordinate Pictures Designed by and for Children.* Feb./Mar., p. 38 (John G. Harvey).
Sutton, Ann and Myron. *Wildlife of the Forests* (Wildlife Habitat Series). Sept./Oct., p. 44 (Gilbert Wright).

Valenti, Christopher. *Keeping a Marine Aquarium: A Manual.* Sept./Oct., p. 44 (Donald J. Nash).
Vivian, V. Eugene. *Sourcebook for Environmental Education.* Apr./May, p. 44 (Roger Spacht).

Wenninger, Magnus J. *Spherical Models.* Nov./Dec., p. 42 (Gerald R. Rising).
Wentworth, Daniel F., et al. *Examining Your Environment.* Apr./May, p. 45 (Thomas J. Rillo).

C30